



A Consign Routing Protocol To Upsurge The Range In Hybrid Wireless Networks

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Abstract: A hybrid wireless network includes an infrastructure wireless network as well as a mobile ad-hoc network. Hybrid wireless networks were receiving lot of attention in the recent times. Most of the present routing protocols within hybrid wireless networks combines cellular transmission mode within infrastructure wireless systems in addition to ad-hoc transmission mode within mobile ad-hoc networks. In our work, we suggest a distributed three-hop data routing protocol for hybrid wireless networks. Proposed distributed three-hop data routing procedure reduces transparency because of short path lengths as well as removal of route discovery as well as maintenance.

Keywords: Hybrid Wireless Networks; Routing Protocols; Mobile Ad-Hoc Network; Distributed Three-Hop Data Routing; Route Discovery; Transmission Mode;

I. INTRODUCTION

The rising interest to increase capacity of wireless network for high performance applications has motivated expansion of hybrid wireless networks. A hybrid wireless network combines an infrastructure wireless system as well as mobile ad-hoc network to control their advantages and prevail over their limitations, and increases throughput ability of wide-area wireless network [1]. A protocol of routing is important that affects throughput ability of wireless network within data transmission. Protocols make use of multi-hop routing to forward message towards mobile gateway nodes that are closest to Base stations or else have maximum bandwidth to base stations. The mobile gateway nodes afterwards forward messages towards base stations functioning as bridges to fix ad-hoc network as well as infrastructure network. On the other hand, direct grouping of two transmission modes take over some problems that are rooted within ad-hoc transmission mode. High overhead: Route discovery as well as maintenance gain high overhead. Hot spots: The mobile gateway nodes simply become hot spots. Low reliability: Dynamic as well as long routing paths lead to untrustworthy routing. These problems turn into a problem in attaining of high throughput ability as well as scalability within hybrid wireless networks. When consideration of extensive base stations, mobile nodes contains the highest probability of encountering a base station while moving and by taking benefit of this feature, we suggest a Distributed Three-hop Data Routing protocol in our work [2][3]. The system includes a congestion control algorithm for avoidance of load congestion in base stations in case of disturbed traffic distributions within networks. Its distinguishing features of short path length, transmission of short-

distance, and balanced load distribution provide highest routing reliability as well as effectiveness.

II. METHODOLOGY

As number of such devices was increasing sharply in the recent times, a hybrid transmission arrangement is extensively used in near future. Such a structure combines intrinsic benefits and overcome drawbacks of infrastructure wireless networks as well as mobile ad-hoc networks. In our work, we suggest a Distributed Three-hop Data Routing protocol for hybrid wireless networks. For taking complete benefit of widespread base stations, the proposed distributed three-hop data routing protocol partitions message data stream into segments as well as transmits segments inside a distributed manner. The system makes complete spatial reuse of a system by means of high speed ad-hoc interface and lessens mobile gateway congestion by means of its cellular interface. Sending of segments to several base stations at the same time enhances throughput and makes complete usage of extensive base stations. The recent hybrid wireless networks just merge routing protocols in two types of networks for data transmission that prevents them from attaining advanced system capacity. The proposed distributed three-hop data routing protocol reduces transparency because of short path lengths as well as removal of route discovery as well as maintenance. The proposed system moreover contains a congestion control algorithm to put off overloading of base stations. In the proposed system, a source node divides a message stream to several segments. Each of the segments is sent towards a neighbour mobile node. Proposed system produces significantly lower overhead by means of elimination of route discovery as well as maintenance. On the basis of the needs of QoS, the mobile relay nodes decide among direct

communication or relay transmission towards base station [4]. In relay transmission, a segment is forwarded in the direction of an extra mobile node by means of higher capacity towards a base station than current node. In direct transmission, a segment is forwarded directly towards a base station. Inside infrastructure, segments are reorganized in their unique order and sent towards the destination. The number of routing hops within the proposed system is confined to three, together with at most two hops within ad-hoc transmission mode as well as one hop in cellular transmission mode.

III. AN OVERVIEW OF PROPOSED SYSTEM

The infrastructure wireless network is the most important means of wireless communication within our daily lives. It stands out at inter-cell communication as well as Internet access. It makes possibility of universal network connectivity as well as ubiquitous computing by means of integrating all types of wireless devices into network. The recent hybrid wireless networks just merge routing protocols in two types of networks for data transmission that prevents them from attaining advanced system capacity [5]. We put forward a distributed three-hop data routing protocol for hybrid wireless networks. This distributed three-hop data routing protocol partitions message data stream into segments as well as transmits segments inside a distributed manner. In the proposed system, a source node divides a message stream to several segments. Each of the segments is sent towards a neighbour mobile node which later forward segments towards their destination through an infrastructure network. The proposed system limits routing path length to three, and constantly arranges for high-capacity nodes towards forwarding of data. Different from most of the existing routing protocols, the proposed system produces considerably lower overhead by means of elimination of route discovery as well as maintenance. Additionally, its distinguishing features of short path length, transmission of short-distance, and balanced load distribution provide highest routing reliability as well as effectiveness. The proposed system contains a congestion control algorithm for avoiding of load congestion in base stations in case of disturbed traffic distributions within networks. The system makes total spatial reuse of a system by means of high speed ad-hoc interface and lessens mobile gateway congestion by means of its cellular interface. Sending of segments towards a number of base stations at the same time enhances throughput and makes complete usage of extensive base stations. For overcoming shortcomings, the proposed system tries to limit hops number. The initial hop forwarding make a distribution of segments of a message in several directions to completely make use of resources, and promising second hop forwarding makes sure of

high capacity of forwarder. The proposed system moreover contains an algorithm of congestion control for balancing traffic load among close by base stations to stay away from traffic congestion at base stations. By means of self-adaptive as well as distributed routing with high speed and short-path ad-hoc transmission, the proposed system increases throughput capacity as well as ability of hybrid networks by means of overcoming shortcomings of earlier routing algorithms. It includes several features such as Low overhead which reduces overhead which is caused by route discovery as well as maintenance within ad-hoc transmission mode, particularly in dynamic environment [6]. Hot spot reduction: reduces traffic congestion at mobile gateway nodes while making complete usage of channel resources all the way through distributed multi-path relay. High reliability: due to its small hop path length by short physical distance in every step, it reduces noise and neighbour interference and avoid difficult effect of route breakdown throughout data transmission hence it decreases rate of packet drop and makes complete usage of spacial re-usage where several source as well as destination nodes can communicate at the same time devoid of interference.

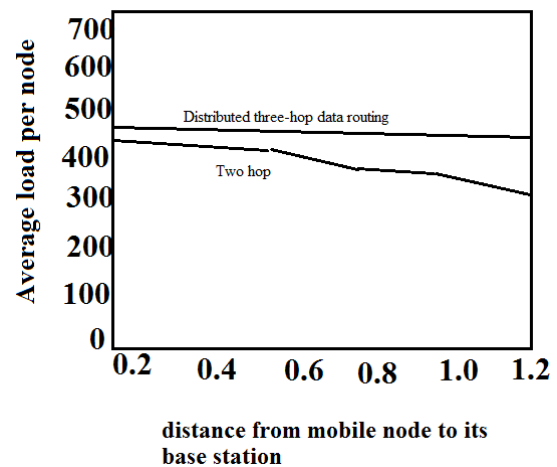


Fig1: An overview of Load distribution in a cell

IV. CONCLUSION

For increasing ability of hybrid wireless networks, a variety of routing methods by various features were proposed. We propose a distributed three-hop data routing protocol for hybrid wireless networks. For benefitting of widespread base stations, the proposed distributed three-hop data routing protocol partitions message data stream into segments as well as transmits segments inside a distributed manner. The system makes absolute spatial reuse of a system by means of high speed ad-hoc interface and lessens mobile gateway congestion by means of its cellular interface. The scheme moreover contains a congestion control algorithm to put off overloading of base stations.

Different from most of traditional routing protocols, the proposed system produces considerably lower overhead by means of elimination of route discovery as well as maintenance.

V. REFERENCES

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